REMARKS/ARGUMENTS

I. Status of the Claims

Claims 1, 3, 5, 6, and 7 will be pending after entry of the amendment. Claim 1 has been amended. Claim 7 has been added to provide further coverage for a preferred embodiment. Claim amendments are for purposes of improved clarity or consistency of claim language unless otherwise noted. No claim amendment should be construed as an acquiescence in any ground of rejection. No new matter has been added by this amendment. Support for the amendment of claim 1 and addition of claim 7 can be found in the specification, for example, on page 4, lines 12-14 and page 12, lines 12-15, l. 18-19, and in original claims 2 and 4.

Applicants note that the substitute drawings filed April 10, 2003 have been accepted by the Examiner.

II. The Claims Are Patentable Under 35 U.S.C. § 103(a)

Claims 1, 3, 5, and 6 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gallimore et al. (1998, of record), for the reasons of record as set forth in Paper No. 22 mailed 1/10/03. Applicants traverse the rejection.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or to combine the reference teachings, there must be a reasonable expectation of success for achieving the claimed invention and its particular results, and the prior art must teach or suggest all the claim limitations. *See In re Vaeck*, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991). For the reasons discussed below, a proper *prima facie* case of obviousness has not been set forth.

Independent claim 1is directed to a method for the detection of antigen specific T cells, comprising contacting a MHC class I protein-fluorescent protein fusion molecule or a radiolabeled MHC class I protein, bound to a specific antigen with a population of T cells, wherein a source of the MHC class I protein-fluorescent protein fusion molecule is a recombinant cell expressing MHC class I protein fused with a fluorescent protein; incubating the fusion molecule bound to the specific antigen together with the population of T cells for a period of time sufficient for the T cells to internalize the fusion molecule from the T cell

surface; and identifying the T cells that have internalized the fusion molecule or the radiolabeled MHC class I protein. The cited references fail to teach or suggest such a method.

The Office Action cites the Gallimore et al. reference as teaching a method for the purification of antigen-specific T cells. The Gallimore et al. reference uses a purified tetrameric phycoerythrin-labeled neutravidin biotinylated MHC class I- peptide complex, which is subsequently used to stain T cells. See Gallimore et al., p. 1385, col. 1, paragraph 2, and col. 2, paragraph 2. By contrast, the presently claimed method detects antigen specific T cells utilizing a source of the MHC class I protein-fluorescent protein fusion molecule from a recombinant cell expressing MHC class I protein fused with a fluorescent protein. The recombinant cell can be, for example, a Drosophila cell as recited in dependent claim 7. Unlike the purified tetrameric MHC class I complex of the Gallimore et al. reference, the recombinant cell of the present claimed invention expresses the MHC class I-protein-fluorescent protein fusion molecule, thus acting as an antigen presenting cell to present the fusion molecule on the surface of the recombinant cell. The fusion molecule-antigen complex on the recombinant cell surface binds to a population of T cells for a period of time sufficient for the T cells to internalize the fusion molecule from the T cell surface.

The additional references cited in the Office Action fail to cure the deficiencies of the Gallimore et al. reference. The Office Action further cites U.S. patent 5,858,777 and U.S. patent 6,346,377 for various examples of labeling, including fluorescent, phosphorescent, radioactive, or fusion proteins. The GST fusion protein or MBP fusion protein of the '377 patent is used for a protein purification technique by an affinity column binding of Fab-GST or Fab-MBP fusion proteins. By contrast, the claimed invention is a method for the detection of antigen specific T cells comprising, in part, contacting a MHC class I protein-fluorescent protein fusion molecule or a radiolabeled MHC class I protein, bound to a specific antigen with a population of T cells, wherein a source of the MHC class I protein-fluorescent protein fusion molecule is a recombinant cell expressing MHC class I protein fused with a fluorescent protein, followed by incubation for a period of time sufficient to allow T cells to internalize the fusion molecule from the T cell surface. Accordingly, even if an ordinarily skilled artisan would have found some reason to combine the teachings of the references, the claimed method would not have been achieved. The use of the GST or MBP fusion proteins,

as taught for a protein purification technique in the '377 patent, would not have achieved applicants' claimed method for detection of antigen specific T cells. Furthermore, there is no motivation to combine the fluorescent-, phosphorescent-, or radioactive-labeled proteins of the '777 or '377 patents with the Gallimore et al. reference to obtain applicants' claimed invention. For the reasons stated above, the claimed invention is patentable over the Gallimore et al. reference even when considered with the other cited references.

Accordingly, applicants respectfully request that the rejection of claims 1, 3, 5, and 6 under 35 U.S.C. § 103(a) be withdrawn. Applicants also request allowance of new claim 7, since the feature recited therein further patentably distinguishes over the cited references.

III. The Claims Are Patentable Under 35 U.S.C. § 112, Second paragraph

Claims 1, 3, 5, and 6 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to recite a purification step. Applicants have amended the preamble claim 1 to better define the claimed invention without limiting the scope of the claim. Consequently, the rejection for indefiniteness should be withdrawn.

IV. Conclusion

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-332-1380.

Respectfully submitted,

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